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ARCHANGEL.

[Port of Archangel.]

THE intercourse of the English with Russia commenced in the middle of the sixteenth century, before the Russian empire extended to the shores of the Baltic. For nearly two centuries and a half the commerce of the Baltic was engrossed by the Hanseatic Association, who endeavoured to exclude other maritime nations from any share in it, when a fortunate accident enabled the English to obtain access by sea to the territories of the czar of Muscovy.

In 1553 an expedition, consisting of three ships, under the command of Sir Hugh Willoughby, sailed from England for the purpose of discovering a north-east passage to China and the East Indies. In latitude 72° they were dispersed by a violent storm; one of the ships was lost, and Sir Hugh Willoughby was driven into a port of Lapland, where he and his crew were frozen to death. Richard Chancellor, who commanded the remaining vessel, reached Wardhuys, on the coast of Norway, where he waited some time for his companions. After this delay he proceeded on his voyage, and reaching the White Sea, ascended the river Dwina, and cast anchor opposite a monastery dedicated to St. Nicholas. Being interrogated by the Russians, he determined upon rendering the circumstances under which he had reached their country as favourable as possible to the interests of England; and he replied, that he was come with the design of entering into amicable commercial relations with them. This statement was strictly true, although such was not the direct object of the expedition; but he had been provided with letters addressed to the rulers of any country on whose shores he might happen to stand in need of assistance and protection. Ivan, surnamed the Terrible, having heard of the arrival of the strangers, ordered Chancellor and some of his companions to his court at Moscow; and at an audience with the czar, Chancellor presented one of the letters from his sovereign. After several interviews Ivan gave him an answer, addressed to the king of England, offering great encouragement to the English to open a trade with Russia. Some Dutch merchants at Moscow endeavoured to prevent this favourable issue, by representing the English as pirates; but Ivan was too desirous of improving his people by intercourse with foreigners to listen to them. He had besides reasons to be displeased with the conduct of the Hanseatic Association, and was also engaged in a war

with Livonia, which caused a considerable interruption to the usual course of the trade by the Baltic.

On Chancellor's return to England the account which he gave of his negotiations was so satisfactory, that the original promoters of the North-East Discovery expedition were incorporated as "The Merchants Adventurers for the Discovery of Lands Unknown."

In 1555 Chancellor made a second voyage to Russia, accompanied by some of the agents of the Company, and bearing a letter from Philip and Mary to the czar. Ivan evinced the sincerity of his former professions by giving the Company permission to settle and trade in all parts of his dominions; and he granted them an exemption from all tolls, taxes, and imposts whatever. Russia, at this period, was in a half-civilised state, but Ivan showed himself fully capable of appreciating the advantages of commerce. In the document by which he granted the above privileges, he states, that "considering how needful merchandise is, which furnisheth men of all that which is convenient for their living and nourishment, for their clothing, trimming, the satisfying of their delights, and all other things convenient and profitable to them; and that merchandising bringeth the said commodities from divers quarters in so great abundance, as by means thereof nothing is lacking in any part; and that all things be in every place (where interchange of merchandises is received and embraced), generally in such sort [proportion] as amity is thereby entered into and planted to continue; and the enjoyers thereof be as men living in a golden world." Such were the grounds on which he encouraged commercial relations with the English.

A charter was also granted by Philip and Mary to the "Marchants of Russia, grounded upon the discoverie of the said countrie." It gave them the monopoly of the trade, and excluded from the dominions of the Russian emperor all English ships except those belonging to the Company; and in addition gave the Company a similar monopoly of the trade to regions not already known to English merchants.

In the same year Chancellor returned from his second voyage to Russia, with cargoes of the value of 26,000*l*., and accompanied by an ambassador with sixteen Muscovite noblemen in his train; but three out of the four ships under his command were lost, including his own ship. The ambassador arrived safely in England, and was received with great distinction and respect at court.

The third voyage of the English to Russia proved unsuccessful, and the ships were obliged to return in consequence of the ice. The practicability of navigating the seas which formed the northern limits of Russia was however satisfactorily demonstrated; and Ivan directed the port of Archangel to be built. It was commenced in 1584, and soon became the centre of the trade of Muscovy with foreign parts. Until the Russians extended their empire to the Baltic, Archangel was their only seaport. The Dutch and Hamburghers subsequently participated with the English in the trade with Archangel. Early in the seventeenth century from 300 to 400 ships, chiefly English and Dutch, were frequently to be seen in the port at one time. Its prosperity received a check when Petersburg was founded; but the empress Elizabeth, in 1762, placed it on a similar footing with that privileged and favoured city, and it has since been gradually increasing in importance as the great emporium of the northern parts of Russia. The produce of the country on the borders of the Dwina, which is navigable for three hundred miles, together with the produce and manufactures of Siberia, consisting of fish, fish-oils, tallow, candles, timber, pitch, tar, wax, iron, linseed, hides, bristles, furs, &c., are shipped at Archangel to the value of above 500,000*l*. in each season. As soon as the navigation becomes open, the Dwina is covered with a multitude of vessels and boats of every description; and the scene both on the water and on the quays is busy, cheerful, and animating. There are some sugar-refineries, and manufactories of canvas and cordage, and considerable activity in ship and boat building. At a distance of eleven miles below Archangel there is a government ship-yard. The "White Sea Company" despatches vessels every year to the fisheries of Nova Zembla, Spitzbergen, and Kalgiew.

The houses at Archangel are almost all built of wood, two stories high, and those of the richer class are replete with the comforts and luxuries of superior civilization. There are two main streets, connected by narrow lanes, paved with wood. The population amounts to about 15,000, living in 2000 houses. The site of the town is forty miles from the mouth of the Dwina; but although the width of the river at Archangel is nearly five miles, vessels of heavy burthen cannot come up so high as the town. The name given to Archangel by the Russians is "Gorod Archangelokov," or the Town of the Convent of St. Michael the Archangel.

ON ROCKETS.

II.—THEIR MANUFACTURE AND FLIGHT.

[Concluded from No. 490.]

It will be conducive to the clearness of the details connected with this subject if we separate them into four heads; viz. those relating to *ingredients*, *manufacture*, *firing*, and *flight*.

The *ingredients* of a rocket are nearly the same as those for numerous other kinds of fireworks. A rocket may be shortly described as a hollow cylinder, made either of paper or of sheet-iron, and nearly filled with a combustible body rammed in with great force. One end of the rocket is left open for the purpose of firing, and the other end is fitted with a cap containing some composition, which, in the case of a sky-rocket, gives the appearance of stars, a shower of fire, &c., and in the case of a Congreve rocket, destructive missiles. The combustible body rammed into the case is sometimes gunpowder, but more frequently a mixture of gunpowder, saltpetre, and charcoal; sulphur and iron filings are sometimes added, to produce peculiar effects. Saltpetre, or nitre, is the principal ingredient in all fireworks, as the explosive nature of the mixture generally depends upon it. The charcoal, sulphur, &c. are to produce certain modifications in the effect resulting from the explosion of nitre or of gunpowder.

Manufacture.—We shall obtain a sufficient idea of rockets generally, if we attend to the manufacture of a *sky-rocket* of one pound weight, since those of greater or less weight are almost precisely alike in their general features, and since a Congreve rocket is sufficiently like them to render a few words hereafter sufficient respecting that class.

A sky-rocket case is made of paper rolled round until a thick substance, like pasteboard, is obtained; and the quantity of paper thus required for any given size of case is determined by experience. The workman has a *former*, or central stick, round which he wraps the paper; this *former* is cylindrical and very smooth, and the exact size of the intended internal diameter of the rocket. The paper is pasted, and the *former* is rolled up in it, the part of the paper in actual contact with the *former* being left free from paste. As the successive thicknesses of paper accumulate on the *former*, they are rolled on a flat board, so as to become smooth and hard; and this process is continued until the thickness of the pasteboard is about equal to one-sixth the diameter of the case.

The *former* is then withdrawn, and one end of the case is *choked*. This term means a process of tightening, by which the case near one end is squeezed to half its former diameter; so that a neck or choke is thus made. It is effected by drawing a cord forcibly round the case;

and its object is to retain the composition in the case, and yet leave an opening by which it can be ignited. The other end of the case is then cut smooth, and the length is so regulated that from that end to the choke is equal to about six diameters of the case.

The case is now ready to be filled with the composition, which, if it did not require ramming, might be poured in while the case is held in the hand. But as a great compression of the materials is one of the principal means whereby the effect is produced, care must be taken that the case is not burst by the ramming employed. To prevent this the case is placed in a strong wooden cylinder, just large enough to receive it, with the choke downwards and the open end upwards. There are many receipts for rocket composition; but Dr. M'Culloch recommends, for a pound rocket, nitre, charcoal, and sulphur, in the proportions of 4 of the first to 1½ of the second and 1 of the third. These ingredients are well mixed up, in the first place, and then poured into the case, a small quantity at a time. When a small quantity has been poured in, it is rammed down with great force by means of rammers made of gun-metal or of hard wood; and if the rocket be above a certain size, a mallet is also used: in the case of a pound rocket it is said that thirty blows with the mallet are required to each charge or supply, a charge being equal in depth to half the diameter of the case. When one charge is thus rammed down, another is poured in and rammed in a similar manner; and so on until the proper quantity of composition has been introduced.

But it is necessary, for a reason which we shall hereafter state, that the rocket should have a bore or aperture nearly through its whole length. This is effected in an ingenious manner: the mould in which the case is placed has a spindle projecting upright from the bottom; and the rammer has a cavity similar in shape to the spindle, so that the one will fit on the other. Throughout the filling of the case, therefore, there is a portion of it, nearly through its length, which receives no composition, because it is occupied by the spindle.

When the case is nearly filled with composition, a small quantity of clay is rammed in, a little hole being made through the centre of the clay with a gimlet.

The rocket, thus far made, is now to be fitted with the *head*. To explain the use of this head, we may remind the reader, that while a sky-rocket is ascending, a brilliant train of sparks marks its course; and that when its course is nearly ended, an explosion, accompanied by brilliant stars, &c., ensues: the train of sparks is due to the composition contained in the case, and the explosion, stars, &c., to that contained in the head, which also ignites the later of the two.

The cap is a short cylinder, with a conical projection at one end, and is usually of rather greater diameter than the rest of the case. It is made of paper, pasted in numerous thicknesses one over another, in the manner described before. When the cap is made, it is filled before it is put on; and the contents may be here briefly noticed. Sometimes a number of small cases, called *serpents*, are enclosed in the head: these are filled with sulphur, nitre, and charcoal, which are rammed in such a manner that when the cases ignite, they take a serpentine course through the air. Sometimes small cases, called *rains*, are enclosed in the head: these are filled with a similar composition, so arranged that, when ignited, they fall perpendicularly to the ground, and thus, when their number is great, they appear like a shower of fiery rain. A third kind of ornament for placing in the head are *stars*: these are little balls, made of sulphur, nitre, antimony, and one or two other ingredients, moistened with gum-water, and made up into a paste. When they explode, they present the appearance of brilliant stars. Lastly, we may speak of the contents of the head of a Congreve rocket: these are for a very different purpose from that of ornament, since the rocket owes much of its destructive power to the contents of the head: sometimes an explosive composition is used, similar to gunpowder; at others, sharp missiles; and at others, again, composition which will yield a suffocating odour.

Whatever may be the contents of the head, they are placed in it, and a small quantity of gunpowder is introduced, in order to explode them. The head is then fastened on the rocket, the latter is taken out of the mould, and the lower end is closed by a strong covering of paper. With respect to Congreve rockets, we may remark that the cases are made of iron and the head filled with destructive composition; but the general mode of manufacture somewhat resembles that of sky-rockets. The minutiæ of their manufacture are not suffered by the government to be made public.

Firing.—The mode in which a rocket is "let off," is, to ignite the lower end, or that most remote from the head. The composition with which it is filled will immediately cause a train of sparks to issue with great force, and the rocket will proceed to move in the direction of the head: if, for instance, the rocket were held vertically with the head upwards, it would, on being ignited, ascend vertically. But as the wind, or an inequality in the composition, or many other circumstances, might tend to change the direction in which the rocket moved, it would follow a zigzag and uncertain course, not unattended with danger to spectators. To obviate this, the rocket is supplied with a rudder, in the form of a long stick, to which it is tied. The object in view is, in fact, to lengthen the rocket from a few inches to several feet. A sportsman knows that a long rifle will ensure a straighter course to a bullet than a short pistol; and the stick of a rocket is intended to answer nearly the same purpose. A rocket six or seven inches long is generally tied to a stick as much as eight feet in length; and there have been occasions when sticks twenty-five feet long have been used.

When very small rockets are fired, the stick may be held loosely in the hand, and suffered to escape upwards on the rocket being ignited; but with larger rockets this is impracticable, especially when it is desired that the rocket should ascend either vertically or at any defined angle.

In such case, the rocket is supported on or in a frame, which is so arranged that the rocket-stick shall be held steadily in one direction until it finally rises into the air. In firing Congreve rockets, the frame or support, whatever it be, is fixed at a given angle dependent on the distance of the town, fort, or ship on which the rocket is desired to fall. In firing signal rockets at sea, &c., it is desirable that they be as nearly perpendicular as possible, in order to be seen from a distance; but in every case where rockets are used either for signals or for amusement, it is contrived to give them such a direction that the stick, after the rocket is expended, shall fall at a spot where spectators are not likely to be injured by it. Great injury, or even loss of life, if the stick be large, might result from neglect of this precaution.

Flight.—The flight of a rocket affords a beautiful instance of the resistance of the air. When the lower end is ignited, the composition becomes, by combustion, converted into gases, which occupy so much more space than the solid ingredients from which they were formed, that the case has not room for them, and they rush out at the open end; but in so doing they encounter the air which forms our atmosphere, and which offers such resistance to the escape of the gases, that it gives rise to a motion in the opposite direction; that is, the whole rocket is moved forward. The recoil of a cannon or gun is due to nearly the same cause. In both cases the hollow cylinder containing the exploding substance moves in the opposite direction from that in which the gaseous products of the explosion are escaping; only in the one case our object is

to propel the contents of the cylinder, and in the other to propel the cylinder itself.

A portion of the ingredients is converted into gas, which causes the ascent, while another portion gives rise to the brilliant train of sparks which marks the ascent. The rocket continues to ascend as long as the composition lasts, when it ignites the gunpowder contained in the cap or head, and this, in its turn, explodes the rain, stars, serpents, missiles, combustibles, or whatever else may be the contents of the head. This is the reason why the brilliant explosion which terminates the career of a sky-rocket takes place when it is nearly or quite at its greatest elevation: it generally continues to ascend as long as any of the composition remains. This remark, of course, applies only to rockets when they are fired off nearly in a vertical direction, as sky-rockets usually are.

In describing the mode of filling the cases, we stated that it is contrived to leave a bore or hollow nearly through the whole length of the composition. The object of this is, that a larger surface of composition may be on fire at one time than would be the case if the whole were solid and only a transverse section of it ignited at once. The larger the surface exposed to heat at one time, the more rapidly is gas generated, the greater is the force with which the external air has to contend, and the more rapid, consequently, is the flight of the rocket. Dr. M'Culloch estimates that, what with the conversion of the solid composition into gases, and the instant expansion of those gases by the great heat of the mixture, the actual space occupied by the gases is two thousand times that of the solids from which they were generated; so that a rocket three inches in diameter and two feet long will generate three hundred and eighty-four thousand cubic inches of gas: hence arises the rapid motion of the rocket, from the great resistance which the air makes to the exit of such a large quantity of gas from the rocket.

Sometimes rockets, made nearly in the manner before described, are made to run along a horizontal cord, instead of ascending with a stick: these are called *line* rockets. There is a paper tube or a perforated piece of wood attached to the rocket, through which the cord passes; and the two ends of the cord being firmly fastened at any given height from the ground, and the cord tightly stretched, the rocket, when fired, will run along the line by means of the tube from which it is suspended. Two or three rockets may be so connected that a reciprocating motion may be produced, one rocket moving in one direction, and then, when expiring, communicating fire to another, which will move in the contrary direction.

Another modification obtains the name of *water* rocket. In this case the rocket is neither tied to a stick nor to a tube, but has a few bits of cork attached to it: these corks enable it to swim on the surface of water; and when ignited, it skims along at the surface of the water, sometimes dipping beneath it, and at others mounting above it, and wandering about in serpentine directions according to the resistance which it meets with from the water. Such is the violence with which the gases rush out of the rocket, that if it even pass through a large body of water, none will enter the case, nor will it interfere with the combustion and explosion of the composition. Sometimes a water rocket is fastened to a flat stick which floats on the surface of the water, by which means its course is rendered more direct and uniform.

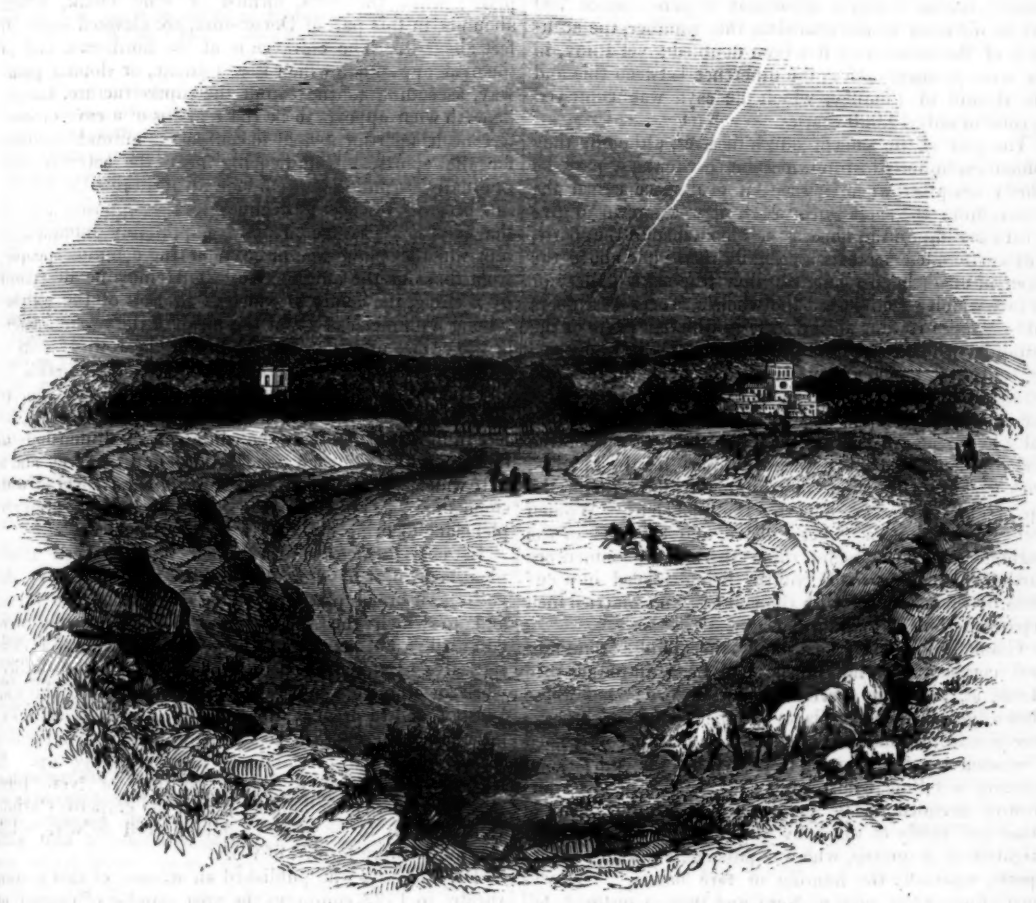
In conclusion, we will just observe that we have not professed to instruct the reader how to make a rocket, but to afford a general notion of its nature and mode of action, and of its application to military, to telegraphic, and to ornamental purposes.

The Goat in Norway and in South Africa.—Two recent travellers in opposite quarters of the globe thus speak of the value to man of this most economical animal. Mr. Laing ('Journal of a Residence in Norway') observes:—"Goats seem a favourite kind of stock in Norway, and on every farm they appear much more numerous than sheep. The hills have no pasture for the latter, no heath or rough grass; what is not bare rock is bush or tree. The goat will eat and thrive on the shoots of the dwarf birch, beech, and young fir; the sheep will not, and in winter it requires some hay. The goat then gets a bundle of dried leaves and shoots of the beech, which cost only the trouble of collecting and drying them. Every farm-house at this season (August) is surrounded with bundles of these withered branches and leaves of beech tied together, and stuck upon poles to dry. The goat, too, gives some milk in winter, when that of cows is scarce, and that little may bear to be increased with water better than any other milk." Sir James Alexander, who undertook an expedition into the interior of Africa on account of the Geographical Society, says:—"To an African traveller goats are invaluable; they can accompany him everywhere, and live where cattle would pine away and die; though the cattle of South Africa are surely the most hardy and enduring in the world. They eat the tops of many bushes, but not so many as the goats, each of which gives nearly as much milk as a Namaqua cow, and of much richer quality. The milk I obtained from my four or five milch-goats (though at times, when we were hard pressed for water, it only amounted to a pint, morning and evening, amongst them), was a source of great comfort and support." Mr. Laing says:—"There is a right way to do everything; even, it seems, to milk a goat. You should turn its head towards you, put your left arm over its back, and milk it with both hands in that position."

Manufacture of a Quartern Loaf.—The most complicated manufacture, perhaps which we have among mankind, and which, in all its parts requires the most continued exertions of human industry and skill, is the production of a quartern loaf from a few seeds of wheat put into the earth.—*Laing's Norway.*

Henrick, the Namaqua Zebra-Hunter.—Walking on his toes with an elastic springing step, at the rate of upwards of five miles an hour, he paced over the plain glancing over the ground for foot-marks, and on each side of him, with keen eyes. The prints of the compact-hoofed zebras are observed on the sands, and presently the troop itself is seen grazing near. Henrick stoops, disencumbers himself of every skin covering which might encumber him, even to his leopard-skin cap, and steals as near as he can to the game without being perceived; but the watchful eye of the stallion discovers the hunter, when he leaves the cover of the bushes, and, giving the alarm to the rest, the whole gallop off. Henrick, without putting himself to the top of his speed at first, follows them; the zebras stop to gaze. Henrick, running like a race-horse, with his stomach near to the ground, bounds towards them. Away they rush again, snorting, and tossing their striped heads in the air, and switching their light and mule-like tails in the pride of fancied fleetness and freedom. The hunter "sits on their skirts," and relaxes not from his pursuit for a moment; he clears stones, bushes, and other impediments; after three or four miles he is in perfect wind; the ground seems to fly from under him; and, as he expressed it, he was now unable to distinguish the heaven from the earth. The zebras stop and gaze occasionally as before; but it is now but for an instant, for their enemy is closing with them; he drives them towards a steep face of rock; they hesitate about the means of escape; Henrick is amongst them in a moment, and seizing one of the striped troop by the tail, he swings it to one side, throwing the whole weight of his own body towards the ground at the same time. The zebra falls on its side, when Henrick instantly plunges his knife into its chest; and then allows it to rise and run off; it keeps up with the rest for a short distance, then gradually falls behind the troop, weak from loss of blood. Its comrades wait for it till Henrick again dashes forward, repeats his fatal thrust, and if two stabs are not sufficient to stretch the zebra dead on the plain, a third is given, which rolls the beautiful body lifeless on the ground. The successful hunter then returns to his huts to send people with pack-oxen to bring home the prize.—*Sir J. E. Alexander's Expedition to the Interior of Africa.*

ROMAN AMPHITHEATRE AT DORCHESTER.



[Amphitheatre at Dorchester.—From a Sketch taken from the south-west.]

It has generally been the policy of a conqueror to engraft the manners of his own country on a vanquished people, that their tastes may gradually become assimilated to that of their conquerors, and the desire for a disunion less ardent. Thus the Romans, when they obtained a footing in Britain, lost no time in introducing in the island and disseminating among the inhabitants those luxurious habits and voluptuous enjoyments to which a long career of power and prosperity had familiarised them. But among the customs which characterise different nations, and by which we may oftentimes judge of their leading dispositions, none have a greater effect on the minds of the common people, and from none is it so difficult to wean them, as their national sports and festivals. The Romans seem to have been aware of this, and to have exerted themselves greatly to render their own sports and amusements popular in their newly-acquired territory, conscious that nothing would tend more to dispel the lurking enmity and jealousy of the natives than the taste acquired for new pleasures and the commingling of both nations in the same amusements; and it is probably to this principle, rather than to the necessity for providing sports for their own soldiers, that we may refer the erection of those large amphitheatres, the remains of some of which are yet distinguishable in different parts of England. The most perfect of these is that represented in the engraving, situated in the immediate vicinity of Dorchester, which in dimensions almost rivals the celebrated erections of Italy itself.

An amphitheatre differs from a theatre in being a continuous enclosure, the latter being only a semicircle having its diameter closed up by the scene or stage. The first permanent theatre was erected by Pompey, although previously theatres had been constructed for temporary purposes of great magnificence and at an extraordinary expense. Pliny minutely describes the theatre erected by Scaurus in his ædileship, which in splendour surpassed even the works of a similar character produced under the auspices of the emperors themselves. The scene was divided into three compartments, one above the other (according to the practice of the ancient plays), and adorned with three hundred and sixty columns of marble, which material was also used for the base of the building, although the use of it at that time was considered a piece of unwarrantable extravagance; the sides were plated with glass, then a most costly article; and the boards, ceilings, and floorings of the upper stories were gilt. The pillars were each 38 feet high, around which and interspersed between them were statues and images of brass to the number of three thousand. The hangings of this theatre were of cloth of gold; the stage was besides ornamented with pictures; and the actors' apparel was of the most costly description. We may form some idea of the expense of these adjuncts by the estimated value of a portion which was afterwards consumed at a fire which burnt the villa of Scaurus at Tusculum. Pliny says that those articles which were burnt amounted in value to a hundred mil-

lions of sesterces, upwards of 80,000*l*. The theatre itself was sufficiently large, according to the writer from whom this account is taken, to contain 80,000 persons seated; but as it would apparently require a space 700 feet in diameter to accommodate this number, the accuracy of the dimensions has been doubted; yet Pliny, in the same passage, notices the difference between this and the theatre of Pompey, which he says was contrived to contain only 40,000 seats.

The plan of the ancient amphitheatres, although they sometimes differed in unimportant particulars, may be briefly described as follows:—An oval space, called the *arena*, from the sand with which it was strewn to give a firm footing and to absorb the blood shed in the sports, was surrounded by seats gradually rising one above the other in an inclined plane, till they reached a gallery or terrace which encompassed the whole. There were doors and passages leading to the seats in different parts of the building, which seats were divided vertically into *cunei* by staircases, and horizontally parted off for the different ranks of spectators. The space nearest the arena, called the *podium*, was appropriated to the senators, who generally had seats placed for them by their servants; the seats immediately above were set apart for the knights, with whom sat the civil and military tribunes; and the upper rows were occupied by the plebeians. Women were stationed in a gallery above, and servants in the highest gallery. Besides these there were sometimes further distinctions made, youths being placed in a cuneus by themselves or with their tutors, and married men separated from the unmarried.

Gladiatorial exhibitions, and the public slaughter and combats of wild beasts, had been introduced to Rome at an early period of its history; but these shows generally took place in the forum or in the circus, until Julius Cæsar, in his dictatorship, constructed a wooden theatre, or amphitheatre, for the purpose of feasting or killing wild animals. But the first amphitheatre intended to be permanent was built, partly of stone and partly of wood, by Statilius Taurus, at the instigation of Augustus, who was passionately fond of these sports, especially the hunting of rare beasts. This was burnt during the reign of Nero, and though restored, fell short of the wishes of Vespasian, who commenced the vast structure completed by his son Titus, and afterwards called the Coliseum, otherwise the Flavian Amphitheatre. The expense of this building, it is said, would have sufficed to erect a capital city, and its dedication was celebrated with the utmost magnificence. The number of wild beasts slaughtered on the occasion is said to have amounted to more than 5000 (Dion Cassius makes the number 9000). At the conclusion of these sanguinary sports, the arena was filled with water, and a number of vessels richly decorated and filled with men went through all the manœuvres of a sea-fight. On extraordinary occasions further luxuries were contrived to gain the admiration of the multitude, or to increase the splendour of the scene. The arena was sometimes strewn with pounded stone: Caligula, in a fit of extravagance, used borax; and Nero, on another occasion, clothed it with a brilliant red, by mixing cinnabar with the borax. Many other extravagancies might be mentioned by which a temporary notoriety was gained by the expenditure of vast sums of money, which, properly or wisely dispensed, would have effected some permanent good, and crowned the donor with imperishable honour.

To return to the amphitheatre at Dorchester. This memorial of the former power of the Romans in Britain is situated on the rising part of a plain about a quarter of a mile beyond the south-western gate of the town, from the inhabitants of which it has received the name of Maumsbury, from what cause it is difficult to conjecture. In the neighbourhood are other antiquities, and one of the ancient roads of the Romans passes near the spot. The dimensions of this ruin are considerable, the longest diameter being 218 feet, and the shortest 163. The arena is sunk somewhat below the level of the surrounding plain; while the sides, formed of solid chalk, which abounds in this part of Dorsetshire, are elevated some 30 feet above it. The entrance is at the north-east end of the oval, opposite to which is a staircase, or sloping pathway, ascending to the top of the superstructure, having beneath what appears to be the remains of a cave or subterraneous apartment used to confine the animals destined for the sports. Commencing near the entrance, and gradually ascending on each side till it attains the middle row of seats whence it declines to the opposite end of the oval, is a passage or terrace, probably intended to separate the popularia, or seats of the common people, from those of the knights, &c. This may be described by a circle, the centre of which is in that of the ellipse, having a diameter of about the mean of the two diameters of the ellipse or oval. On the top of the rows of seats is a terrace, about 12 feet broad, divided from the seats by a parapet; and from this, descending to the smaller terrace just described, is a *cuneus*, or parcel of seats, 30 feet in breadth, but somewhat different in dimensions to the rest, which are each one foot high and two feet and a half wide. It is probable these seats were covered with stone or wood, although it was the practice of even the plebeians to bring cushions with them to sit on.

In consequence of the arena having been much ploughed up, it is difficult to trace the outline of the *podium*, a broad platform which surrounded the arena, and to which the senators and highest officers were admitted; but its extent may be defined on a close scrutiny. Before the podium, grates, nets, and lattice-work of iron were placed for security against the wild beasts; and to prevent their escaping among the spectators, there were also fixed wooden rollers, which, turning round, prevented the animals from climbing up. At the amphitheatre at Rome, in the time of Nero, these nets were knotted with amber; and the emperor Carinus caused them to be made of golden cord or wire, while the rollers were formed of ivory.

Dr. Stukeley, who published an account of this amphitheatre in 1723, computes the area capable of containing nearly 23,000 people. He supposes it to have been constructed about the time of Titus; but of course in such a matter, where the remains offer nothing, either in plan, construction, or inscription, capable of affording any information, and where no record exists to which we may refer for a solution of the question, it is impossible to arrive at anything but a conjectural conclusion. In modern times the arena has been used for the execution of criminals; and when, so late as 1705, a woman was burnt here for some crime, 10,000 people assembled to witness the punishment. The frequent assemblages on similar occasions had, when Stukeley visited it, much defaced the structure; and although it has not much altered in appearance since, the plough has rendered the arena very different from its original appearance.

Before Stukeley described it, it had been visited by Sir C. Wren; but we are not aware that his observations were ever published, except references to it in some of his works.

THE MOGUL DYNASTY IN HINDUSTAN.
No. VII.

[Concluded from No. 482.]

Feroksere was proclaimed in 1713, and as he began his reign, so he continued. Every individual within his power from whom he thought it possible that danger might come, he slaughtered without compunction. The most distinguished posts were now conferred on the two Syads, an unnecessary step upon the part of the emperor, for they were the men to take without scruple whatever

they desired. Feroksere became a mere tool in their hands; and when this was fully perceived by him, matters only became worse; for in endeavouring to get rid of them, he plunged himself into a vortex of intrigues from which death alone extricated him. After various manœuvres had been ineffectually tried, the emperor engaged one Daood Khan Punnee, an Affghan governor, to attack Hussun in one of his marches; this scheme was defeated in the very moment of success by Daood's death from a musket-ball. Ultimately the brother deposed Feroksere, who died shortly after in captivity, whether naturally, or from violence, seems uncertain. During this reign, which lasted six years, Banda, the Sikh leader, had fallen into the emperor's hands, and was put to death by torture in the capital, and his followers dispersed with great loss. The Mahrattas, on the other hand, were during all these conflicts steadily increasing in power.

Two brothers, Ruffeh-al-Dirjant and Ruffeh-al-Dowlat, now reigned in succession, the first of whom lived but five months, and the second three.

Rooshun Akter, the son of Shah Aulum's fourth son, was now proclaimed emperor under the title of Mahomed Shah. The miserable cabals that had so embroiled the empire during the reign of Feroksere, were also in full operation during the early part of the present reign, the objects in both cases being the same; on the part of the Syads, to control the emperor—and on the part of the emperor, to get rid of such overbearing subjects. Hussun was at length assassinated by one of the emperor's agents, and Abdoolla defeated, upon which the emperor returned to the capital with as much pomp and magnificence as though he had but just assumed the sceptre, and certainly it was only from that time he exercised the imperial authority. Little benefit accrued from the change. Mahomed was weak and devoted to luxury. He had two able ministers, Nizam-al-Mulk and Saadit Khan, but he was disgusted with their gravity, and they with his preference of other and less able men: accordingly they withdrew for a time to their respective governments, the first to the Deccan, and the last to Oude, where their descendants, more fortunate than those of their imperial master, exercise princely authority to this day. The numerous enemies who had grown up unnoticed or unchecked during so many weak administrations, now began to extend their ravages farther, and with greater boldness. The Mahrattas in particular had become so powerful, that at last the emperor adopted the fatal and most disgraceful expedient of engaging to pay them a fourth of his revenues as the price of peace. The moral power of the empire, which might for some time have survived even the decline of its physical strength, was, by this one act, irrecoverably lost. As a characteristic trait of the utterly worthless character of this sovereign, we must not omit to mention, that soon after this treaty was made, finding the collection of this fourth troublesome, he actually empowered the Mahrattas to levy it themselves upon the unfortunate inhabitants, who were thus abandoned to the spoiler. We have now to speak of the most awful of the events that signalised the fall of the Mogul dominions—the invasion by Nadir Shah; and it is not unworthy of remark, that as of the two most fearful inroads Hindustan has known, Timur's preceded and prepared the country for the rise of the Mogul power, and the other, under Nadir Shah, followed its decline and accelerated its fall, so the motives to each were the same, plunder; both were successful from the same cause, the disorganised state of the country under its weak and worthless rulers; and lastly, the results of each were in the highest degree important, the first, as we have shown, being the establishment of Baber and his successors; whilst the last opened the way for the most momentous event of Indian history—the British rule.

Nadir was the son of a shepherd of Chorassan, who, by selling a portion of his father's flocks, hired a banditti, with whom he scoured the country. He engaged himself in the service of Thamas, son of Hussun, the Sophi of Persia, who had been deposed by an Affghan. Under this prince, who aimed at the restoration of his family, Nadir greatly distinguished himself, and at last grew strong enough to attack the Affghan usurper and overthrow him. He now put out the eyes of the unfortunate Thamas, and caused himself to be proclaimed king of Persia in 1736, under the title of Nadir Shah. The Affghans still troubling him, he pursued them into their own country, and from thence he marched into Hindustan. He was partially provoked into this measure by the murder of an ambassador and his escort by the inhabitants of Jellalabad, and by the contemptuous treatment of his demand for explanation and redress, exhibited by Mahomed. Nadir first punished the people of the offending city by filling its streets with blood; he then marched towards Delhi by Peshawir and Lahore, encountering little opposition; so rapid were his movements, that he was within four days' march of Delhi before the emperor had the slighest idea of the proximity of his dangerous visitor. When the hostile armies met, Nadir's veteran forces bore down all opposition; the emperor's principal general and minister, Dowran, was killed; and Saadit taken prisoner. The latter endeavoured to turn his captivity to good purpose by negotiating with Nadir the terms on which the latter could be induced to quit Hindustan. He so far succeeded, that Mahomed came personally to Nadir's camp, and the agreement was concluded that the conqueror should quit India on the receipt of two millions of money. This happy arrangement was defeated by the unprincipled ambition, which stopped short at no degree of infamy, of the emperor's chief minister Saadit and the Nizam. The object of their ambition was the post just vacant by the death of Dowran. Saadit's services in the treaty justly entitled him to it, which the Nizam being aware of, at once demanded the office from the emperor, over whom he now exercised almost unlimited sway, and the unhappy Mahomed had no resource but to comply. Saadit now undid all that he had previously accomplished: he represented to Nadir that the ransom was so paltry, that he would himself engage to pay an equal amount from his own private fortune: he expatiated on the immense treasures of Delhi. The temptation was too great for the listener; Nadir took possession of the capital on the 9th of March, 1739, retaining Mahomed as his prisoner, whom, however, he treated with respect, and relieved from the idea of being driven from his throne. Saadit and the Nizam now received the reward of their villainy. Nadir addressed them thus:—"Are not you both most ungrateful villains to your king and country, who, after possessing such wealth and dignities, called me from my own dominions to ruin them and yourselves? But I will scourge you with all my wrath, which is the instrument of the vengeance of God." He then spat upon their beards, and dismissed them with the greatest indignity. Saadit died almost immediately; one authority says from having taken poison, another from disease.

For nearly two days the inhabitants were unmolested; but a slight incident that occurred on the evening of the second day produced the appalling calamities that rendered Nadir's name terrible. A Persian seized by force the basket of a man who was selling pigeons, who immediately called out that Nadir had ordered a general pillage, and made a violent outcry. The streets were filled with people, many of whom fell upon the Persian and the companions who had gathered round and supported him. At this moment the cry was raised that Nadir was dead; and, as with one impulse, the people fell upon the Persian soldiers, and before nightfall killed two thousand of them. Nadir, who was in the citadel, was informed of the affair about midnight. He instantly went into a public part of the city, and waited for daybreak, when a person from a

neighbouring terrace shot at him and killed an officer by his side. This gave the last sting to the madman's growing fury. Squadrons were sent through the streets, and musqueteers upon the terraces to commence a general massacre. No age nor sex was spared; men, women, and children fell indiscriminately on the same bloody heaps; and according to the frightful estimate of Colonel Dow, 100,000 souls perished before two o'clock of that day. "The king of Persia," says the same authority, "sat during this dreadful scene in the Musgid of Roshin ul Dowlat. None but the slaves durst come near him, for his countenance was dark and terrible. At length the unfortunate emperor, attended by a number of his chief Omrahs, ventured to approach him with downcast eyes. The Omrahs who preceded Mahomed bowed down their foreheads to the ground. Nadir Shah asked them sternly what they wanted. They cried out with one voice, "Spare the city." Mahomed said not a word, but the tears flowed fast from his eyes. The tyrant, for once touched with pity, sheathed his sword, and said, "For the sake of the prince Mahomed, I forgive." So instantaneous were the effects of his orders, that in a few minutes everything was calm in the city. The pillage was yet to take place. The amount, according to the authorities who make it the least, was above thirty-two millions; whilst others say nearly eighty millions. During its collection, to add to the horrible state of the city, the gates were strictly closed, and the inhabitants whom the sword had spared were now perishing by famine. The public spirit of an actor, named Tucki, relieved the citizens from this calamity; for having exhibited a play before Nadir, which greatly pleased the latter, and for which he was told to ask what he wished, and it should be done, Tucki fell on his knees before Nadir and cried, "O king, command the gates to be opened, that the poor may not perish." The request was granted, and Tucki rewarded in the noblest manner by the blessings of his fellow-creatures.

Nadir finally quitted Delhi on the 14th of April, having first given some good advice to the emperor, and obliged him to cede the provinces between Persia and Hindustan.

During the subsequent years of the emperor's life, the Rohillas, originally an Affghan clan, rose under Ali Mohammed. This power, like the Mahratta, became celebrated in the Anglo-Indian wars. The Affghan nation itself, under a most enterprising chief, Ahmed Abdalla, their king, invaded Hindustan, but at first without any material consequences. The emperor died in 1747, in the thirtieth year of his reign and the forty-ninth of his age.

Ahmed Shah, the eldest son of Mahomed, succeeded to the throne without opposition. The chief transactions of his reign are connected with the increase of the Rohillas and Mahratta powers, and with the repeated invasions of Abdalla, the Affghan king, who completely severed the north-western provinces of Moultan and Lahore from the empire. On all sides the emperor was attacked and insulted, constantly compelled to give way, and only enabled to obtain peace by concession after concession. About this time a grandson of the Nizam, who figured so conspicuously in the affairs of the previous reign, by name Ghazee-ad-Dien, became formidable to the emperor for his skill, his ambition, and the extent of his resources. A scheme was concerted by Ahmed Shah and some of his creatures to get rid of him, but they were outmanœuvred. Ghazee-ad-Dien seized Delhi, deposed the emperor, and put out his eyes. A son of Jehander Shah succeeded, under the title of Aulumgeer II., to whom Ghazee-ad-Dien made himself vizier, or in other words, over whom he made himself master.

In this reign the Sikhs, whom we have before noticed, once more rose into importance, and Abdalla, in revenge for an act of treachery by Ghazee-ad-Dien towards the governor of Lahore, marched up to the very gates of Delhi, which the emperor was obliged to open to him, and for some weeks the capital was again at the mercy of an invading soldiery. The once mighty emperor of Hindustan had now sunk so low in the person of Aulumgeer II., as to beg Abdalla, at his departure, that he would not leave him to the mercy of his overbearing vizier. He was assisted as he desired, but soon fell again into the hands of the bold Ghazee-ad-Dien, by whom he was assassinated in 1759. The Mahrattas now approached the capital, to endeavour by one bold stroke to possess themselves of the empire. They were opposed by Abdalla, who was again on the Indian territory. The hostile forces met in 1760 near Paniput, so famous in Indian history for the eventful battles fought on its plain, and, after a contest almost unexampled for severity, Abdalla remained victor. Of an army of 140,000 horse, commanded by all the most celebrated Mahratta generals, only a mere residue of the former and three of the latter escaped. Abdalla still refused the sovereignty, which he gave to Alee Gohur, under the title of Aulum II.

With this emperor, who was never really master of the dominions he nominally possessed, and who experienced a great variety of the most cruel disasters and misfortunes, the Mogul empire terminated by Shah Aulum's resigning his authority to the English for a pension.

In conclusion we may express our hope that the short sketch we have given in these papers of a most interesting portion of Indian history conveys its own moral, which "all who run may read," namely, that neither the purest virtue nor the loftiest intellect in a sovereign can give strength to the inherent weakness of an absolute despotism; where the weight of empire is, as it were, supported at the apex by the king, rather than, as in freer countries, at the base by the people. In the political phenomena of India under the Mogul dynasty, there are two circumstances that particularly strike upon the attention. The continual outbreaks of the provincial governors, and the facility with which, under Timur, Baber, and Nadir Shah, a vast and densely populated country was overrun by foreign invaders. The explanation of the first seems to be found in the nature of the tenure by which provincial governors held their authority. They could have no permanent interest in their districts, because the land belonged entirely to the emperor, and they were liable to be suddenly removed to another and perhaps distant part, or dismissed altogether, in which case they might at once fall into poverty and insignificance. They were thus induced to drain the resources of their government to the utmost, as their possession was so uncertain, and frequently with the additional motive of enabling them to carry on a rebellion against the emperor whenever he should wish to dispossess them of the provinces. The system was thus a perpetual premium upon revolt and oppression. The other circumstance to which we alluded seems to be thus accounted for:—the people, not having the smallest possible share in the machinery of government, were perfectly uninterested in the continual struggles of their superiors for power. All changes were alike to them; or if not alike, the balance of anticipated good was most probably favourable for such an invader as Baber; it is even possible that Timur and Nadir, coming as they did when confusion and discontent pervaded the empire, were looked for with more curiosity than dread, more hope than fear, by the uninstructed multitudes of India.

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